RESEARCH-DEVELOPMENT AND TESTING NATIONAL INSTITUTE FOR ELECTRICAL ENGINEERING



ICMET CRAIOVA

ÎNCERCARE

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TEST REPORT

No. 9348 / February 18, 2005

\$R EN ISO/CEI 17025:2001 CERTIFICAT DE ACREDITARE Nr.004 - L

Tested product:

2000 kVA / 0.4 kV Elektrik Panel

Test:

Verification of short-circuit withstand strength

Verification of the effectiveness of the protective circuit

Test method:

According to IEC 60439-1/1999, subclause 8.2.3 and 8.2.4

Test purpose:

Quality certification

Test date:

February 18, 2005

Test result:

Passed the test successfully

Head of LMP:

Dr. Eng/George Curcanu



Responsible for quality assurance:

Eng. Constantin Ilinca



Responsible for test group:

Eng. Constantin Iancu

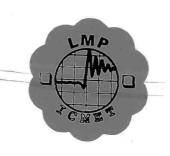
Responsible for test:

Eng. Ilie Sbora

Eng. Florin Alin Dinca

Test witness: Mr. Yusuf ARPACIOGLU from IMI Consultancy A.S. - Turkey

Report has 16 pages and it is edited in 4 copies from which 3 copies for customer.



Note:

- 1. Publication or reproduction of the contents of this report in any other form unless its complete photocopying is not allowed without laboratory and RENAR writing approval.
- 2. Results refer to test product only.
- 3. Accreditation of the laboratory or any of its Test Reports issued under accreditation regime do not constitute or do not imply themselves an approval of the product by RENAR which gave the accreditation or any other body.

P101-01ae

CUSTOMER:

IMI CONSULTANCY A.S.

206 Sok. No. 1 K:1 D:1 A - Blok Bornova IZMIR - Turkey

MANUFACTURER: TEKPAN TEKNIK ELEKTRIK KUMANDA, PANO

SAN. VE. TIC. LTD. STI.

Kemalpasa Mah. 405/1 Sokak No: 4 Pinarbasi IZMIR - Turkey

IDENTIFICATION OF APPARATUS

Electric panel

Circuit breaker

Type

DHL

VL 250 and VL160X

Serial number/year

0151/2005

Manufactured by Siemens

Technical documentation/Drawing

-/ See page 8

Order no .:

Contract No. 3107 / 14.01.2005

Product receiving's date:

18.01.2005

Product condition at receiving:

New

PERFORMANCES ESTABLISHED BY PRODUCER

Rated operational voltage	0.4	kV
Rated power	2000	kVA
Rated frequency	50	Hz
Rated short-time current		*
- peak value (Ipk)	105	kA
- r.m.s. value (Icw)	50	kA
Rated duration of short-circuit (t)	1	S
Rated conditional short-circuit current (Icc)	40	kA

TEST PROGRAM

Verification of the short-circuit withstand strength was performed on the following circuits:

- Main bus bars (three-phase test) at parameters: Ipk = 105 kA, Icw = 50 kA, t = 1 s. Supply was made with 2x240 mm² flexible cables of 2 meters on the input terminals and the short-circuit was made with 80x10 mm² copper bar on the output terminals of the busbar (see page 9).
- 250 A outgoing circuit (three-phase test) at parameters: Ipk = 84 kA, Icc = 40 kA, t = 0.2 s.
- 63 A outgoing circuit (three-phase test) at parameters: Ipk = 84 kA, Icc = 40 kA, t = 0.2 s. 3. Supply was made with 2x240 mm² flexible cables of 2 meters on the busbars input terminals and the short-circuit was made with 180 mm² flexible cables of 2 meters on the output terminals of the circuit breaker.

Previously for both outgoing circuits was made:

- current calibration test at parameters: Ipk = 84 kA, Icc = 40 kA, t = 0.2 s;
- voltage calibration test at U = 400 V, t = 0.2 s. Test circuit is presented in page 3.
- 4. Neutral circuit (single-phase test) at parameters: Ipk = 63 kA, Icw = 30 kA, t = 1 s.
- 5. Protective circuit (single-phase test) at parameters: Ipk = 105 kA, Icw = 50 kA, t = 1 s. For tests supply was made with 2x240 mm² flexible cables of 2 meters between the input terminal of the phase T and output terminal of the protective circuit. General busbar of phase T was connected serial with the input terminal of the protective circuit with 2x240 mm² flexible cables of 2 meters.

Test circuit is presented in page 4.

TEST REPORT DOCUMENTATION:

Oscillograms

7; Tables

Photos

1; Drawings